

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

AMENDMENTS TO THE CLAIMS

1. (Original): A modular sensor assembly of a towed array comprising:

a support structure having opposed upper and lower plates spaced apart by vertical sectioning walls and defining discrete chambers of said support structure;

an acoustically absorptive hub positioned centrally in said support structure and in communication with said discrete chambers; and

a sensor element secured in a selected chamber of said support structure.

2. (Original): The assembly according to claim 1 wherein said support structure is an integrally formed viscoelastic housing.

3. (Original): The assembly according to claim 1 wherein said support structure is a cylindrical housing having a central axis with said vertical sectioning walls arranged radially thereabout, said acoustically absorptive hub being positioned at the central axis of said support structure.

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

4. (Original): The assembly according to claim 3 wherein said support structure is integrally formed of a viscoelastic material.
5. (Original): The assembly according to claim 1 wherein said sensor element is secured within said selected chamber of the support structure by structural adhesive.
6. (Original): The assembly according to claim 5 wherein said sensor element is secured to an outer surface of said acoustically absorptive hub with structural adhesive.
7. (Original): The assembly according to claim 1 wherein said sensor element is secured to an outer surface of said acoustically absorptive hub with a structural adhesive.
8. (Original): The assembly according to claim 1 wherein said sensor element is a piezo-electric composite element.
9. (Original): The assembly according to claim 8 wherein said sensor element comprises:

at least two layers of piezo-electric composite, each layer having upper surface and a lower surface; and

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

an electrical insulator positioned between adjacent ones of  
said at least two layers.

10. (Original): The assembly according to claim 9 wherein said  
at least two layers are disposed at first and second different  
distances from said acoustically absorbing hub.

11. (Original): The assembly according to claim 9 wherein said  
at least two layers are disposed in planes parallel to a radius  
from said acoustically absorbing hub.

12. (Original): The assembly according to claim 9 wherein said  
electrical insulator is secured between a first layer of said at  
least two layers and a second layer of said at least two layers  
with a structural adhesive.

13. (Original): The assembly according to claim 9 further  
comprising an electrode on at least one of the upper and lower  
surfaces of each said sensor element.

14. (Original): The assembly according to claim 1 wherein a  
separate said sensor element is secured in each of said discrete  
chambers of said support structure.

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

15. (Currently amended): The assembly according to claim 1 wherein:

said support structure is a cylindrical housing having a central axis with said vertical sectioning walls arranged radially thereabout, said acoustically absorptive hub being positioned at the central axis of said support structure; and

said sensor element having an inner surface oriented toward said acoustically absorptive hub and an outer surface positioned away from said ~~central~~ cylindrical housing, wherein said inner surface conforms to an outer surface of said acoustically absorptive hub and said outer surface conforms to the shape of said cylindrical housing.

16. (Original): The assembly according to claim 15 wherein:

said vertical sectioning walls of said cylindrical housing have a peripheral shape; and

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

said outer surface of said sensor element has a shape conforming with the peripheral shape of said vertical sectioning walls.

17. (Currently amended): The assembly according to claim 1 wherein:

said support structure is a frusto-conical housing having a central axis with said vertical sectioning walls arranged radially thereabout, said acoustically absorptive hub being positioned at the central axis of said support structure; and

said sensor element having an inner surface oriented toward said acoustically absorptive hub and an outer surface positioned away from said ~~central cylindrical~~ housing, wherein said inner surface conforms to an outer surface of said acoustically absorptive hub and said outer surface conforms to the shape of said frusto-conical housing.

18. (Original): The assembly according to claim 17 wherein:

Application Serial No: 10/672,964  
In reply to Office Action of 16 July 2004

Attorney Docket No. 83806

said vertical sectioning walls of said frusto-conical housing have a peripheral shape; and

said outer surface of said sensor element has a shape conforming with the peripheral shape of said vertical sectioning walls.